

33. (New) The method of claim 13, wherein said immunoglobulin molecule is glycosylated and free from detectable sialic acid residues.

34. (New) The method of claim 13, wherein said immunoglobulin molecule is a fragment of a full-length immunoglobulin.

35. (New) The method of claim 34, wherein said fragment is a Fab.

36. (New) The method of claim 34, wherein said fragment is a Fab'.

37. (New) The method of claim 34, wherein said fragment is a F(ab')₂.

38. (New) The method of claim 34, wherein said fragment is an Fv.

39. (New) The method of claim 13, wherein the plant cells are alga cells.

40. (New) The method of claim 13 wherein said plant cells are in the form of a plant.

41. (New) A method of passively immunizing a human or non-human animal subject against a preselected antigen, said method comprising administering to said subject a prophylactic amount of an antigen-specific immunoglobulin, said immunoglobulin isolated from plant cells containing nucleotide sequences encoding an immunoglobulin heavy chain and an immunoglobulin light chain wherein said nucleotide sequences also encode a leader sequence for said heavy chain and said light chain and wherein each leader sequence forms a secretion signal that is cleaved from each of said immunoglobulin heavy chain and light chain polypeptides following proteolytic processing.

42. (New) The method of claim 41, wherein said immunoglobulin heavy chain is a fragment of a full-length heavy chain.

43. (New) The method of claim 41, wherein said heavy chain is full length.

44. (New) The method of claim 41, wherein said immunoglobulin light chain is a fragment of a full length light chain.

45. (New) The method of claim 41, wherein said light chain is full length.

46. (New) The method of claim 41, wherein said heavy chain and said light chain are full length.

47. (New) The method of claim 41, wherein said heavy chain is a fragment of a full length heavy chain and said light chain is a fragment of a full length light chain.

48. (New) The method of claim 41, wherein said heavy chain includes at least a portion of a constant region and wherein said constant region is from an IgA antibody.

49. (New) The method of claim 41, wherein said heavy chain includes at least a portion of a constant region and wherein said constant region is from an IgG antibody.

50. (New) The method of claim 41, wherein said heavy chain includes at least a portion of a constant region and wherein said constant region is from an IgM antibody.

51. (New) The method of claim 41, wherein said immunoglobulin molecule is glycosylated and free from detectable sialic acid residues.

52. (New) The method of claim 41, wherein said immunoglobulin is a fragment of a full-length immunoglobulin.

53. (New) The method of claim 52, wherein said fragment is a Fab.

54. (New) The method of claim 52, wherein said fragment is a Fab'.

55. (New) The method of claim 52, wherein said fragment is a F(ab')₂.

56. (New) The method of claim 52, wherein said fragment is an Fv.

57. (New) The method of claim 41, wherein said preselected antigen is from a pathogen.

58. (New) The method of claim 57, wherein said pathogen is selected from bacteria, viruses, or parasites.

59. (New) The method of claim 47, wherein said pathogen is E. Coli, Salmonellae, Vibrio cholerae, or Salmonellae typhimurium.

60. (New) The method of claim 41, wherein the plant cells are from a monocot.

61. (New) The method of claim 41, wherein the plant cells are from a dicot.

62. (New) The method of claim 41, wherein the plant cells are from an alga.

63. (New) The method of claim 41, wherein the leader sequence is a non-native leader sequence.

64. (New) The method of claim 41, wherein said immunoglobulin is formulated with a pharmaceutically acceptable carrier.

65. (New) The method of claim 41, wherein said plant cells are in the form of a plant.

66. (New) A method of passively immunizing a human or non-human animal subject against a preselected antigen, said method comprising administering to said subject a prophylactic amount of a single polypeptide antigen-specific immunoglobulin, said immunoglobulin isolated from plant cells, said plant cells containing nucleotide sequences encoding a single polypeptide comprising an immunoglobulin heavy chain and an immunoglobulin light chain wherein said nucleotide sequences also encode a leader sequence for said single polypeptide wherein said leader sequence forms a secretion signal that is cleaved from said polypeptide following proteolytic processing.

67. (New) The method of claim 66, wherein said nucleotide sequence encodes the variable region of the immunoglobulin light chain.

68. (New) The method of claim 66, wherein said nucleotide sequence encodes the variable region of the immunoglobulin heavy chain.

69. (New) The method of claim 66, wherein said single polypeptide immunoglobulin further includes nucleotide sequence encoding a linker between the heavy chain and the light chain.

70. (New) The method of claim 66, wherein said single polypeptide immunoglobulin is a single chain Fv.

71. (New) The method of claim 66, wherein said preselected antigen is from a pathogen.

72. (New) The method of claim 71, wherein said pathogen is selected from bacterial, viruses, or parasites.

73. (New) The method of claim 71, wherein said pathogen is E. Coli, Salmonellae, Vibrio cholerae, or Salmonellae typhimurium.

74. (New) A method of preparing an antigen-specific immunoglobulin for passively immunizing a human or non-human animal subject against a preselected antigen, said method comprising combining said antigen-specific immunoglobulin with a pharmaceutically acceptable carrier, said immunoglobulin from plant cells, said plant cells containing::

a) nucleotide sequences encoding a dual chain immunoglobulin product comprising an immunoglobulin heavy chain and an immunoglobulin light chain wherein said nucleotide sequences also encode a leader sequence for each of said heavy chain and light chain, and antigen-specific immunoglobulin encoded by said nucleotide sequence, wherein the leader sequence forms a secretion signal that is cleaved from each of said immunoglobulin light and heavy chain following proteolytic processing; or

b) nucleotide sequences encoding a single polypeptide immunoglobulin comprising an immunoglobulin heavy chain and an immunoglobulin light chain and further containing nucleotide sequence encoding a leader sequence for said polypeptide, and antigen-specific single polypeptide immunoglobulin encoded by said nucleotide sequence wherein the leader sequence forms a secretion signal that is cleaved from said polypeptide following proteolytic processing.

75. (New) The method of claim 74, wherein said antibody is full length.

76. (New) The method of claim 74, wherein said immunoglobulin is a fragment of a full-length immunoglobulin.

77. (New) The method of claim 74, wherein said heavy chain includes at least a portion of a heavy chain constant region and wherein said constant region is from an IgM antibody.

78. (New) The method of claim 74, wherein said heavy chain includes at least a portion of a constant region and wherein said constant region is from an IgG antibody.

79. (New) The method of claim 74, wherein said heavy chain includes at least a portion of a constant region and wherein said constant region is from an IgG antibody.

80. (New) The method of claim 74, wherein said preselected antigen is from a pathogen.

81. (New) The method of claim 80, wherein said pathogen is selected from bacteria, viruses, or parasites.

82. (New) The method of claim 80, wherein said pathogen is E. Coli, Salmonellae, Vibrio cholerae, or Salmonellae typhimurium.

Please amend claims 13, 18, 19, 22-24, 29 and 30 as shown below (a marked-up copy of the amended claims is attached under the heading "VERSION WITH MARKINGS TO SHOW CHANGES MADE"). For the examiner's convenience, all presently pending claims (excluding the new claims shown above) not cancelled herein are shown below.

13. (Twice amended) A method of passively immunizing a human or non-human animal subject against a preselected antigen, comprising administering to said subject a prophylactic amount of an antigen-specific immunoglobulin molecule which specifically binds to said preselected antigen or immunologically active fragment thereof, wherein the immunoglobulin molecule is isolated from plant cells containing nucleotide sequence encoding an immunoglobulin heavy chain polypeptide and an immunoglobulin light chain polypeptide wherein said nucleotide sequence also encodes a leader sequence for each polypeptide; and antigen-specific immunoglobulin product encoded by said nucleotide sequences, wherein each leader sequence forms a secretion signal that is cleaved from each of said immunoglobulin heavy chain and light chain polypeptide following proteolytic processing.

15. The method of claim 13, wherein said immunoglobulin molecule is administered as part of a composition, which composition further comprises a material having nutritional value.

16. The method of claim 15, wherein said material having nutritional value is from a plant or an animal.

17. The method of claim 13, wherein said immunoglobulin molecule is administered as part of a composition, which composition further comprises a physiologically inert material.

18. (Twice Amended) The method of claim 13, wherein said immunoglobulin heavy chain is a fragment of a full-length heavy chain.

19. (Twice Amended) The method of claim 13, wherein said immunoglobulin light chain is a fragment of a full length light chain.

20. (Amended) The method of claim 13, wherein said preselected antigen is from a pathogen.

21. The method of claim 20, wherein said pathogen is selected from bacterial, viruses, or parasites.

22. (Amended) The method of claim 20, wherein the pathogen is E. Coli, Salmonellae, Vibrio cholerae, or Salmonellae typhimurium.

23. The method of claim 13, wherein the plant cells are from a monocot.

24. The method of claim 13, wherein the plant cells are from a dicot.

25. The method of claim 13, wherein the leader sequence is a non-native leader sequence.

29. The method of claim 13, wherein the immunoglobulin heavy chain comprises at least a portion of a constant region and said constant region is from an IgA heavy chain.